

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 through 18 (canceled)

1 Claim 19 (new): An electromechanical filter,
2 comprising:
3 a microvibrator that is adapted to resonate with an
4 input signal;
5 a sensing electrode that is arranged at a
6 predetermined interval to the microvibrator; and
7 a quantum device that senses a change in an
8 electrostatic capacity between the microvibrator and the
9 sensing electrode to output the change as an electric
10 signal,
11 wherein the quantum device has a source and a drain;
12 and
13 wherein the sensing electrode is an electrode provided
14 between the source and the drain of the quantum device.

1 Claim 20 (new): The electromechanical filter
2 according to claim 19, wherein the quantum device is a
3 MOSFET; and

4 wherein the sensing electrode functions as a gate
5 electrode of the quantum device.

1 Claim 21 (new): The electromechanical filter
2 according to claim 19, wherein the quantum device is an
3 SET; and

4 wherein the sensing electrode functions as a
5 conductive island of the quantum device.

1 Claim 22 (new): The electromechanical filter
2 according to claim 19, wherein the sensing electrode
3 includes a charge exciting electrode formed on an
4 insulating layer on a substrate, a projection structure
5 formed on a face opposing to the microvibrator of the
6 charge exciting electrode, and a potential sensing
7 electrode formed on the charge exciting electrode via the
8 insulating layer and connected to the projection structure.

1 Claim 23 (new): The electromechanical filter
2 according to claim 19, wherein the microvibrator is
3 arranged in a magnetic field and is excited by a Lorentz
4 force generated by the magnetic field; and

5 wherein an input signal is input into one end of the
6 microvibrator.

1 Claim 24 (new): The electromechanical filter
2 according to claim 19, wherein the microvibrator has a
3 driving electrode arranged at a predetermined interval to
4 the microvibrator; and
5 wherein the microvibrator is excited by an
6 electrostatic force generated between the microvibrator and
7 the driving electrode.

1 Claim 25 (new): The electromechanical filter
2 according to claim 24, wherein an input signal is input
3 into the driving electrode.

1 Claim 26 (new): The electromechanical filter
2 according to claim 19, wherein the microvibrator and the
3 quantum device are formed on a same substrate.

1 Claim 27 (new): The electromechanical filter
2 according to claim 19, wherein the microvibrator and the
3 sensing electrode of the quantum device are formed of a
4 same material.

1 Claim 28 (new): The electromechanical filter
2 according to claim 19, wherein the sensing electrode of the
3 quantum device is formed of a semiconductor material..

1 Claim 29 (new): The electromechanical filter
2 according to claim 19, further comprising a signal
3 amplifying unit that is provided on a signal output port
4 side.